

and are easily renewable. Thus the plates could be made thicker in the centre, where the chief wear would take place. Moreover, the plates could easily be made of manganese steel, and the holes cast in, thus saving great expense, as the flat plates would be easy to mould, the patterns leaving their own cores. There is no doubt that in any form of screening it is a distinct advantage to have a jerky motion, as may be witnessed in screening sand in a foundry or for building purposes, the operators usually giving the sieve a peculiar jerk and sometimes tossing the sand in the air during the process. In screening materials such as bonedust the circular screens require hammering to keep them clean. The polygonal screen will most effectively accomplish the above objects.

In connection with the method of Messrs. McCallum and Roberts, I may remark that some years ago it was found to be a decided advantage in the screening of coal by mechanical (shaking) screens to have bars of iron across the screen at intervals. This had the effect of causing the coal to tumble over, and any dust or slack which would otherwise have been carried, on large lumps of coal, and deposited into the wagons was thrown off and passed through the meshes of the screen. This experience is merely related to show that there is something to be gained by preventing too smooth a passage for the material which has to be screened.

The following interesting return has been compiled by the Assistant Inspector of Mines for the Southern district from information obtained principally from the several consulting engineers and builders of dredges. This return gives the leading dimensions and approximate cost or present value of a large number of dredges, the names of the designers, and also of the builders of the engines and boilers :—